

802.11ac(draft 2.0)
TEW-811DRU Gigabit Wireless Router

TEW-811DRU

Rev 0.1

User Manual

Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- **EN60950-1:2006+A11: 2009**
Safety of Information Technology Equipment
- **EN 62311:2008**
- Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz)
- General public
- **EN 300 328 V1.7.1: (2006-10)**
- Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- **EN 301 489-1 V1.8.1: (2008-04)**
- Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- **EN 301 489-17 V2.1.1:(2009-05)**
- Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems
- **EN 301 893 V1.5.1(2008-12)**
Broadband Radio Access Networks (BRAN);5 GHz high performance RLAN;Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
-









This device is a 2.4/5G GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.









In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF

output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.



 Český [Czech]	<i>[Jméno výrobce]</i> tímto prohlašuje, že tento <i>[typ zařízení]</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 Dansk [Danish]	Undertegnede <i>[fabrikantens navn]</i> erklærer herved, at følgende udstyr <i>[udstyrets typebetegnelse]</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 Deutsch [German]	Hiermit erklärt <i>[Name des Herstellers]</i> , dass sich das Gerät <i>[Gerätetyp]</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 Eesti [Estonian]	Käesolevaga kinnitab <i>[tootja nimi = name of manufacturer]</i> seadme <i>[seadme tüüp = type of equipment]</i> vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
 Español [Spanish]	Por medio de la presente <i>[nombre del fabricante]</i> declara que el <i>[clase de equipo]</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>[name of manufacturer]</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>[type of equipment]</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
 Français [French]	Par la présente <i>[nom du fabricant]</i> déclare que l'appareil <i>[type d'appareil]</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente <i>[nome del costruttore]</i> dichiara che questo <i>[tipo di apparecchio]</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>[name of manufacturer / izgatavotāja nosaukums]</i> deklarē, ka <i>[type of equipment / iekārtas tips]</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>[manufacturer name]</i> deklaruoja, kad šis <i>[equipment type]</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

 Nederlands [Dutch]	Hierbij verklaart [<i>naam van de fabrikant</i>] dat het toestel [<i>type van toestel</i>] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, [<i>isem tal-manifattur</i>], jiddikjara li dan [<i>il-mudel tal-prodott</i>] jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, [<i>gyártó neve</i>] nyilatkozom, hogy a [<i>... típus</i>] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym [<i>nazwa producenta</i>] oświadczam, że [<i>nazwa wyrobu</i>] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese]	[<i>Nome do fabricante</i>] declara que este [<i>tipo de equipamento</i>] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	[<i>Ime proizvajalca</i>] izjavlja, da je ta [<i>tip opreme</i>] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	[<i>Meno výrobcu</i>] týmto vyhlasuje, že [<i>typ zariadenia</i>] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	[<i>Valmistaja = manufacturer</i>] vakuuttaa täten että [<i>type of equipment = laitteen tyyppimerkintä</i>] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar [<i>företag</i>] att denna [<i>utrustningstyp</i>] står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

European Union Notice:

Radio products with the CE marking comply with the R&TTE Directive (1999/5/EC), the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN 60950 Product Safety
- EN 300 328 Technical requirement for radio equipment
- EN 301 489-1/-17 General EMC requirements for radio equipment
- EN 301 893 V1.5.1(2008-12)

Trademark recognition

All product names used in this manual are the properties of their respective owners and are acknowledged.

Getting Started with the TEW-811DRU

Congratulations on purchasing the TEW-811DRU! This manual provides information for setting up and configuring the TEW-811DRU. This manual is intended for both home users and professionals.

The following conventions are used in this manual:



THE NOTE SYMBOL INDICATES ADDITIONAL INFORMATION ON THE TOPIC AT HAND.



THE TIP SYMBOL INDICATES HELPFULL INFORMATION AND TIPS TO IMPROVE YOUR NETWORK EXPERIENCE.



THE CAUTION SYMBOL ALERTS YOU TO SITUATIONS THAT MAY DEGRADE YOUR NETWORKING EXPERIENCE OR COMPROMISE



LIKE NOTES AND TIPS, THE IMPORTANT SYMBOL INDICATES INFORMATION THAT CAN IMPROVE NETWORKING. THIS INFORMATION SHOULD NOT BE OVERLOOKED.

Package Contents

- TEW-811DRU 802.11ac(draft 2.0)2x2 Gigabit Wireless Router
- CAT-5 Ethernet Cable (All the TEW-811DRU's Ethernet ports are Auto-MDIX)
- Power Adapter (12V, 2A)
- CD-ROM with Software and Manual
- Quick Installation Guide



Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

Minimum System Requirements

- Ethernet-Based Cable or DSL Modem
- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter and CD-ROM Drive
- Internet Explorer (Version 6.0 or higher) Mozilla or Safari.

Wireless LAN Networking

This section provides background information on wireless LAN networking technology. Consult the **Glossary** for definitions of the terminology used in this section.



THE INFORMATION IN THIS SECTION IS FOR YOUR REFERENCE. CHANGING NETWORK SETTINGS AND PARTICULARLY SECURITY SETTINGS SHOULD ONLY BE DONE BY AN AUTHORIZED ADMINISTRATOR.

Transmission Rate (Transfer Rate)

The TEW-811DRU provides various transmission (data) rate options for you to select. In most networking scenarios, the factory default Best (automatic) setting proves the most efficient. This setting allows your TEW-811DRU to operate at the maximum transmission (data) rate. When the communication quality drops below a certain level, the TEW-811DRU automatically switches to a lower transmission (data) rate. Transmission at lower data speeds is usually more reliable. However, when the communication quality improves again, the TEW-811DRU gradually increases the transmission (data) rate again until it reaches the highest available transmission rate.

Types of Wireless Networks

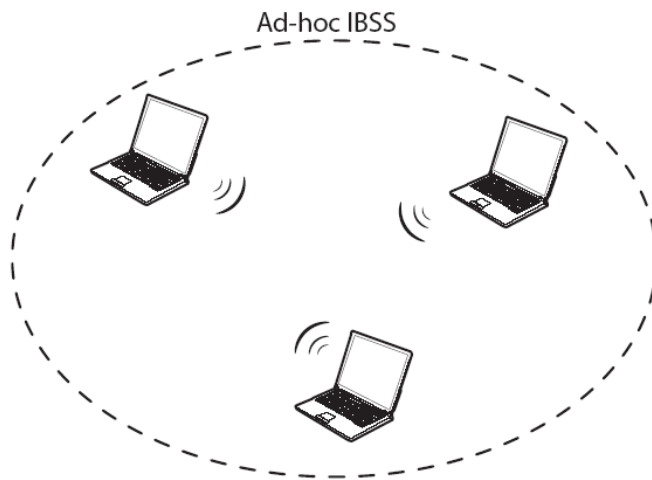
Wireless LAN networking works in either of the two modes: ad-hoc and infrastructure. In infrastructure mode, wireless devices communicate to a wired LAN via access points. Each access point and its wireless devices are known as a Basic Service Set (BSS). An Extended Service Set (ESS) is two or more BSSs in the same subnet. In ad hoc mode (also known as peer-to-peer mode), wireless devices communicate with each other directly and do not use an access point. This is an Independent BSS (IBSS).

To connect to a wired network within a coverage area using access points, set the operation mode to Infrastructure (BSS). To set up an independent wireless workgroup without an access point, use Ad-hoc (IBSS) mode.

AD-HOC (IBSS) NETWORK

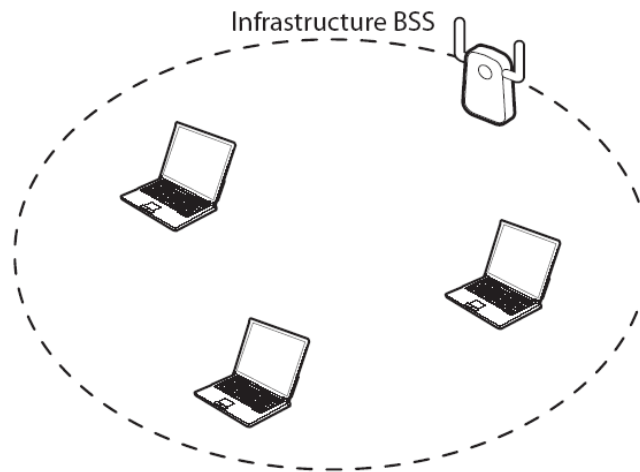
Ad-hoc mode does not require an access point or a wired network. Two or more wireless stations communicate directly to each other. An ad-hoc network may sometimes be referred to as an Independent Basic Service Set (IBSS).

To set up an ad-hoc network, configure all the stations in ad-hoc mode. Use the same SSID and channel for each station.



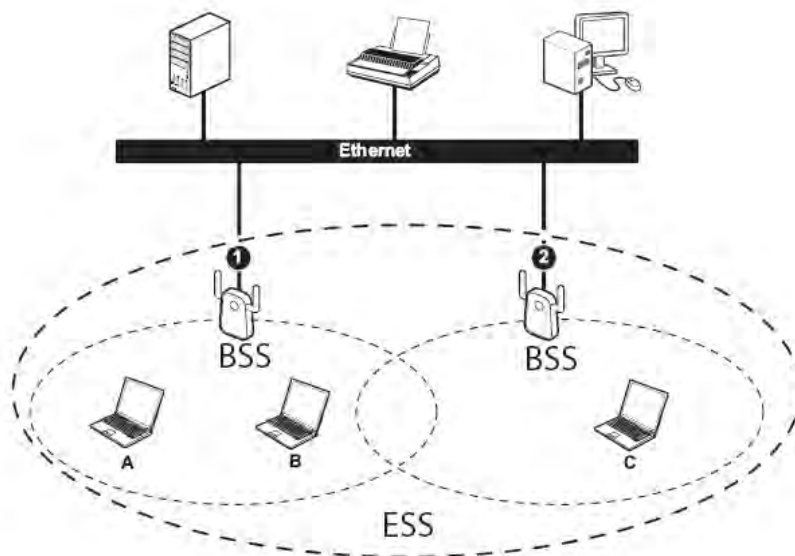
Ad-hoc (also known as peer-to-peer) network diagram

When a number of wireless stations are connected using a single access point, you have a Basic Service Set (BSS).



Infrastructure (IBSS) network diagram

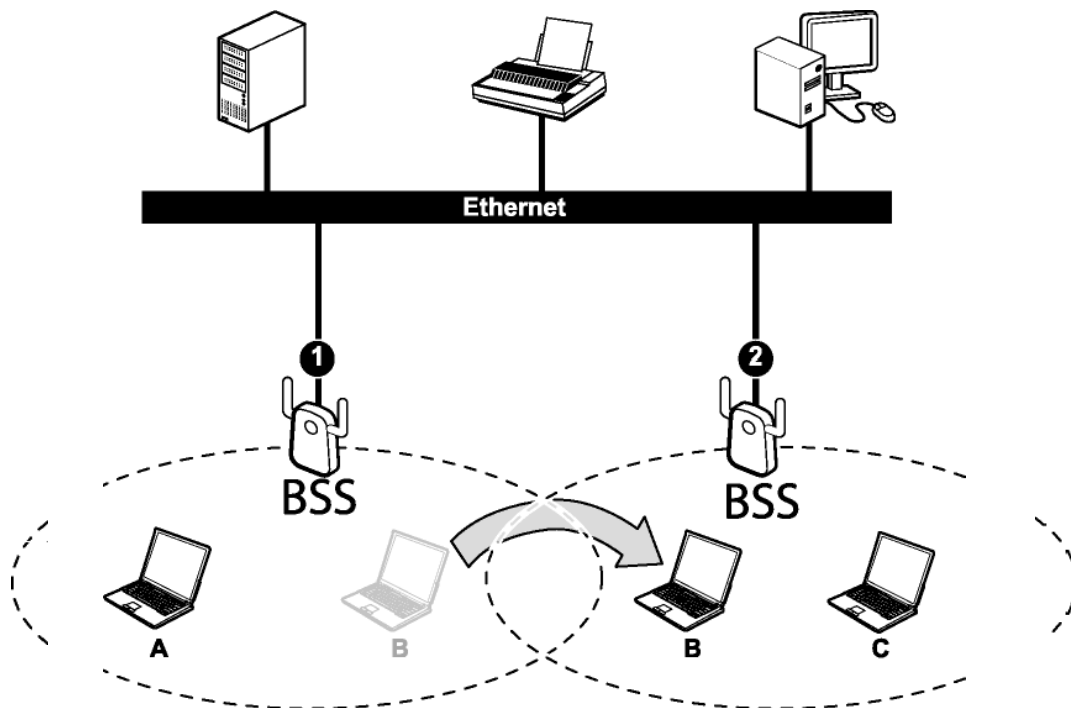
In the ESS diagram below, communication is done through the access points, which relay data packets to other wireless stations or devices connected to the wired network. Wireless stations can then access resources, such as a printer, on the wired network.



Infrastructure (ESS) network diagram

In an ESS environment, users are able to move from one access point to another without losing the

connection. In the diagram below, when the user moves from BSS (1) to BSS (2) the WLAN client devices automatically switches to the channel used in BSS (2).



Roaming in an ESS network diagram

Introduction

The TEW-811DRU 802.11ac (draft 2.0)2x2 Gigabit Wireless Router is an high-performance, wireless router that supports high-speed wireless networking at home, at work or in public places.

Unlike most routers, the TEW-811DRU provides data transfers at up to 867Mbps when using 11AC connection. This router is also back compatible with 802.11n or 802.11g or 11b devices. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 11ac's speed when you mix 11ac /11n and 11b/g devices, but you will not lose the ability to communicate when you incorporate the 11ac standard into your 11b/g/n network. You may choose to slowly change your network by gradually replacing the 11b/g/n devices with 11ac devices.

Features

- 4 x 10/100/1000Mbps Auto-MDIX LAN ports
- 1 x 10/100/1000Mbps WAN port (Internet)
- 1 x USB 2.0 port for sharing USB storage / printer (to be handled by K-Codes)
- 1 x Wi-Fi Protected Setup (WPS) button
- On/Off power switch (CE version only)
- Supports simultaneous 2.4GHz / 5GHz wireless networks
- Compliant with the latest draft 802.11ac wireless technology
- Backwards compatible with IEEE 802.11a/b/g/n wireless standards
- High-speed data rates up to 867Mbps with 802.11ac and 300Mbps with 802.11n *
- IPv6 (Internet Protocol v6) basic function support
- Supports USB file sharing over FTP and Samba (to be handled by K-Codes)
- Shares USB peripheral devices such as flash drives, external hard drives or printers over the network
- Printer Control Center Utility supports Windows 8 (32/64-bit) / Windows 7 (32/64-bit) / Windows Vista (32/64-bit) / Windows XP (32/64-bit) and Mac OS X 10.6/10.7/10.8 operating systems (to be handled by K-Codes) **
- Compatible with most popular cable/DSL Internet Service Providers using Dynamic/Static IP, PPPoE, L2TP, and PPTP connections
- Advanced firewall protection using Network Address Translation (NAT)
- Supports Wireless Distribution System (WDS) for wireless network bridging
- Advanced wireless security of up to WPA2-RADIUS
- Supports Wi-Fi Multimedia (WMM) with configurable WAN Quality of Service (QoS)
- Supports up to 3x Guest Networks per wireless band with access restriction
- Internet Access Control with MAC, URL, Service Type, and IP Range filtering
- Internet Access Control Rule based on schedule, online video games and Internet cameras.
- One touch wireless connection using WPS button
- Configurable web interface using the latest version of Internet Explorer, FireFox, Safari and Chrome

- Virtual server and Application Level Gateway (ALG) services for special Internet applications
- Universal Plug and Play (UPnP) for auto discovery and support for device configuration of Internet applications
- 3- year limited warranty

*Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions. For maximum performance of up to 867Mbps, please use with a 2x2 802.11ac wireless adapter.

** Printer Control Center utility installation required for each computer in order to access the print server

Hardware Overview

LED Indications: (from bottom to top)

- **PWR/WPS**
- **WAN**
- **LAN1**
- **LAN2**
- **LAN3**
- **LAN4**
- **Wireless 2.4G**
- **Wireless 5G**
- **USB**

Rear panel: (from bottom to top)

- **DC-IN**
- **POWER SWITCH(EU)**
- **WAN**
- **LAN1**
- **LAN2**
- **LAN3**
- **LAN4**

Installation Considerations

The TEW-811DRU 802.11ac(draft 2.0)2X2 Gigabit Wireless Router lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1 Keep the number of walls and ceilings between the TEW-811DRU and other network devices to a minimum - each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2 Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- 3 Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

Getting Started

For a typical wireless setup at home, please do the following:

1. You will need broadband Internet access (a Cable or DSL-subscriber line into your home or office)
2. Consult with your Cable or DSL provider for proper installation of the modem.
3. Connect the Cable or DSL modem to the TEW-811DRU Router (WAN port).
4. Ethernet LAN ports of the TEW-811DRU are Auto MDI/MDIX and will work with both Straight-Through and Cross-Over cable.

Start

1. Plug in the power adapter and verify the Power & Ethernet LEDs are light.
3. To configure the router, open your browser, type '<http://tew-811dru>' into the address bar and click 'Go' to get to the setup wizard page.

The screenshot shows the web-based Setup Wizard for the Trendnet AC1200 Dual Band Wireless Router (TEW-811DRU). The interface is dark-themed with a sidebar on the left containing navigation links: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, and Administrator. The main content area is titled "Setup Wizard" and includes an introductory paragraph: "You can use the Setup Wizard to configure your router connect to the Internet, or set up your wireless network and secure." Below this, there are two main sections:

- Internet Connection Setup Wizard**: A text block explaining that the wizard is designed to assist in connecting the router to the Internet, followed by a blue button labeled "Launch Internet Connection Setup Wizard". A note below states: "Note: Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package."
- Wireless Security Setup Wizard**: A text block explaining that the router's wireless network is pre-encrypted with its own unique network security key, followed by a blue button labeled "Launch Wireless Security Setup Wizard". A note below states: "Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the router."

4. At the Password prompt, the User name is 'admin' and password is **admin**. Enter default username and password and press "ok"

Login to the TEW-811DRU	
User Name	<input type="text" value="admin"/>
Password:	<input type="password" value="•••••"/>
Language:	<input type="text" value="English"/> ▼
<input type="button" value="Login"/>	

Setup Wizard is an easy way to set up the TEW-811DRU step by step. The Wizard will teach user to set up the TEW-811DRU just few steps.

5. You could click 'Launch Internet Connection Setup Wizard' and follow Wizard to complete your setting.

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

Setup Wizard

You can use the Setup Wizard to configure your router connect to the Internet, or set up your wireless network and secure.

Internet Connection Setup Wizard

The following Web-based Setup Wizard is designed to assist you in connecting your router to the Internet. This Setup Wizard will guide you through step-by-step instructions on how to get your Internet connection up and running. Click the button below to begin.

[Launch Internet Connection Setup Wizard](#)

Note: Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

Wireless Security Setup Wizard

For added security the TEW-812DRU's wireless network is pre-encrypted with its own unique network security key. Launch the Wireless Security Setup Wizard to change the existing encryption key.

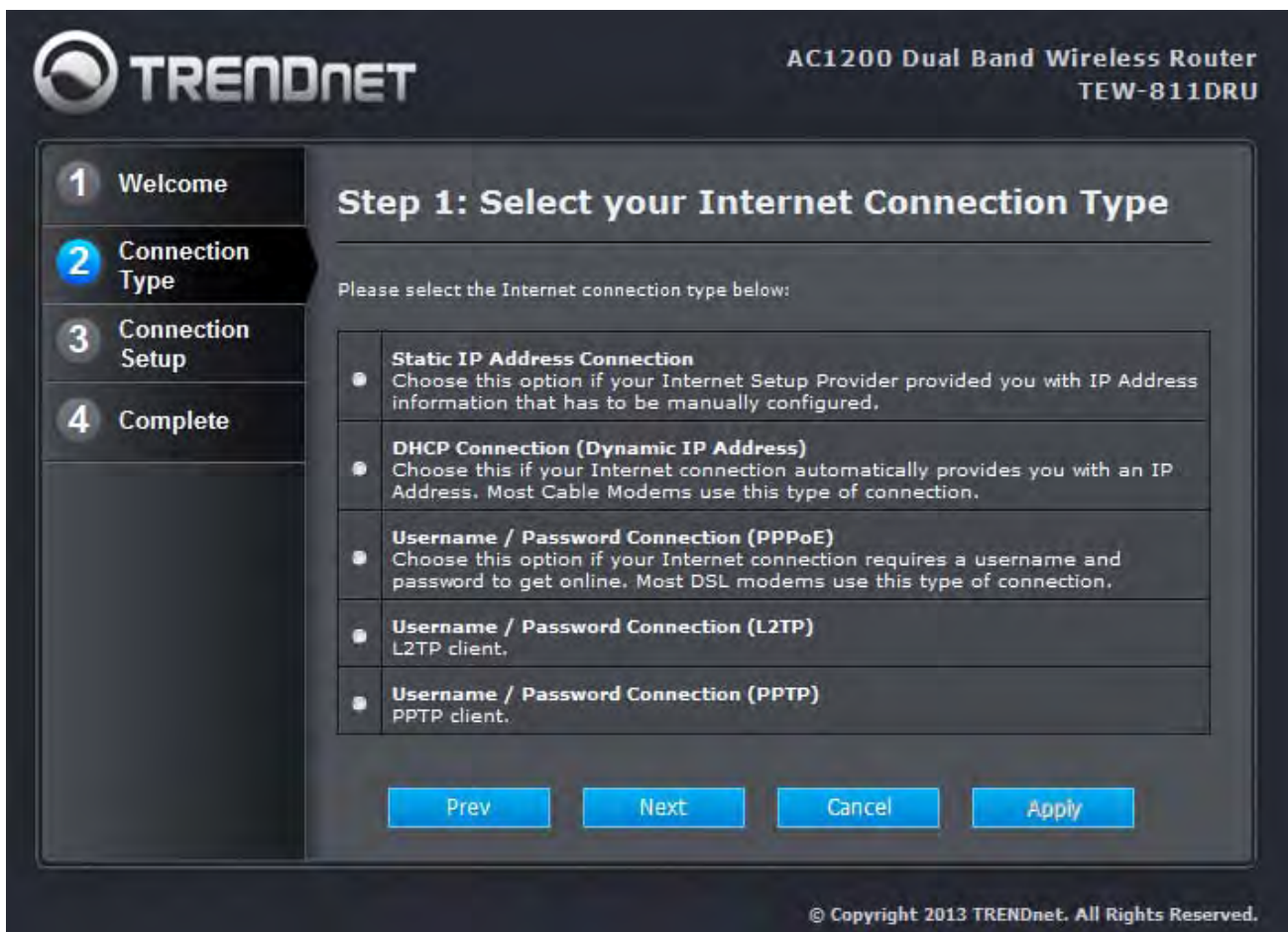
[Launch Wireless Security Setup Wizard](#)

Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the router.

[example]:



If you choice “Static IP Address Connection” than press “Next”



1 Welcome

2 Connection Type

3 Connection Setup

4 Complete

Step 2: Set Static IP Address Connection

To set up this connection you will need to have a complete list of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP.

IP Address	<input type="text" value="10.4.3.180"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="10.4.3.1"/>
Primary DNS Server	<input type="text" value="195.95.1.1"/>
Secondary DNS Server	<input type="text"/>

Prev

Next

Cancel

Apply

- 1 Welcome
- 2 Connection Type
- 3 Connection Setup
- 4 Complete**

Setup Complete!

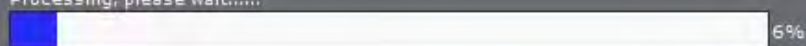
The Internet Connection Setup Wizard is complete. Click the Apply button to save and apply your settings.

Internet Connection Type	Static
IP Address	10.4.3.180
Subnet Mask	255.255.255.0
Default Gateway	10.4.3.1
Primary DNS	192.95.1.1
Secondary DNS	

Then press” **Apply**”

- 1 Welcome
- 2 Connection Type
- 3 Connection Setup
- 4 Complete**

Processing, please wait.....



- You also could click “ Launch Wireless Security Setup Wizard” and follow Wizard to complete your setting

[example]:





Select the 2.4G & 5G security mode



Enter your password



Press "Apply"



1 Welcome**2** Set SSID**3** Select Security**4** Set Password**5** Complete

Setup Complete!

Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.

Wireless Interface	Wireless 2.4GHz
Wireless Network Name (SSID)	TEW-811DRU-2G
Encryption	WPA2-PSK/AES (also known as WPA2 Personal)
Pre-Shared Key	1234567890

Prev

Next

Cancel

Apply

Set up completed.

Network

Network: WAN Setting

WAN Connection Type

There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP, L2TP, and Russia PPTP. If you are unsure of your connection method, please contact your Internet Service Provider. Static

Used when your ISP provides you a set IP address that does not change. The IP information is manually entered in your IP configuration settings. You must enter the IP address, Subnet Mask, Gateway, Primary DNS Server, and Secondary DNS Server. Your ISP provides you with all of this information.

DHCP

A method of connection where the ISP assigns your IP address when your router requests one from the ISP's server.

Host Name: Some ISP's may check your computer's Host Name. The Host Name identifies your system to the ISP's server.

PPPoE

Select this option if your ISP requires you to use a PPPoE (Point to Point Protocol over Ethernet) connection. DSL providers typically use this option. This method of connection requires you to enter a **Username** and **Password** (provided by your Internet Service Provider) to gain access to the Internet.

Reconnect Mode: Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

Always on: A connection to the Internet is always maintained.

On demand: A connection to the Internet is made as needed.

Manual: You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

Maximum Idle Time: Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

L2TP

L2TP (Layer Two Tunneling Protocol) uses a virtual private network to connect to your ISP. This method of connection requires you to enter a Username and Password (provided by your Internet Service Provider) to gain access to the Internet.

L2TP Server IP Address: The ISP provides this parameter, if necessary. The value may be the same as the Gateway IP Address.

Reconnect Mode: Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

Always on: A connection to the Internet is always maintained.

On demand: A connection to the Internet is made as needed.

Manual: You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

Maximum Idle Time: Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

WAN Interface IP Type

Static: If your ISP has assigned a fixed IP address, select this option. The ISP provides the values for the following fields for **WAN Interface IP Setting: IP Address, Subnet Mask , Default Gateway.**

Dynamic: If the ISP's servers assign the router's IP addressing upon establishing a connection, select this option.

PPTP

PPTP (Point to Point Tunneling Protocol) uses a virtual private network to connect to your ISP. This method of connection is primarily used in Europe. This method of connection requires you to enter a **Username** and **Password** (provided by your Internet Service Provider) to gain access to the Internet.

PPTP Server IP Address: The ISP provides this parameter, if necessary. The value may be the same as the Gateway IP Address.

Reconnect Mode: Typically PPPoE connections are not always on. The router allows you to set the reconnection mode. The settings are:

Always on: A connection to the Internet is always maintained.

On demand: A connection to the Internet is made as needed.

Manual: You have to open up the Web-based management interface and click the Connect button manually any time that you wish to connect to the Internet.

Maximum Idle Time: Time interval the machine can be idle before the PPPoE connection is disconnected. The Maximum Idle Time value is only used for the "On demand" and "Manual" reconnect modes.

WAN Interface IP Type

Static: If your ISP has assigned a fixed IP address, select this option. The ISP provides the values for the following fields for **WAN Interface IP Setting: IP Address, Subnet Mask , Default Gateway,** and optional for **DNS Server**

Dynamic: If the ISP's servers assign the router's IP addressing upon establishing a connection, select this option.

MAC Address Clone

Each networking device has its own unique MAC address defined by the hardware manufacturer. Some ISPs may check your computer's MAC address. Some ISPs record the MAC address of the network adapter in the computer or router used to initially connect to their service. The ISP will then only grant Internet access to requests from a computer or router with this particular MAC address. This router has a different MAC address than the computer or router that initially connected to the ISP. If you need to change the MAC address of the router's WAN-side Ethernet interface, either type in an alternate MAC address (for example, the MAC address of the router initially connected to the ISP) or copy the MAC address of a PC. To copy the MAC address of the computer that initially connected to the ISP, connect to the router using that computer and click the **Clone Your PC's MAC Address** button. The WAN interface will then use the MAC address of the network adapter in your computer.

Network: LAN Setting

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

WAN Setting
LAN Setting
IPv6 Setting
QoS
DHCP Client List

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

Local Area Network (LAN) Settings

This page allows you to configure the LAN of the router.

LAN Interface Setting	
MAC Address	00:90:4C:0F:F4:D2
IP Address	192.168.10.1
Subnet Mask	255.255.255.0

DHCP Server Setting	
DHCP Server	Enabled
DHCP Start IP	192.168.10.100
DHCP End IP	192.168.10.150
DHCP Lease Time	86400 (seconds)

Apply Cancel

IP Address

The IP address of the this device on the local area network. Assign any unused IP address in the range of IP addresses available for the LAN.

Subnet Mask

The subnet mask of the local area network.

Enable DHCP Server

Once your router is properly configured and this option is enabled, the DHCP Server will manage the IP addresses and other network configuration information for computers and other devices connected to your Local Area Network. There is no need for you to do this yourself. The computers (and other devices) connected to your LAN also need to have their TCP/IP configuration set to "DHCP" or "Obtain an IP address automatically". When you set **Enable DHCP Server**, the following options are displayed.

DHCP IP Address Range

These two IP values (Start and End) define a range of IP addresses that the DHCP Server uses when assigning addresses to computers and devices on your Local Area Network. Any

addresses that are outside of this range are not managed by the DHCP Server; these could, therefore, be used for manually configured devices or devices that cannot use DHCP to obtain network address details automatically.

It is possible for a computer or device that is manually configured to have an address that does reside within this range. In this case the address should be reserved, so that the DHCP Server knows that this specific address can only be used by a specific computer or device.

Your router, by default, has a static IP address of 192.168.10.1. This means that addresses 192.168.10.2 to 192.168.10.254 can be made available for allocation by the DHCP Server.

Subnet Mask

The subnet mask of the local area network.

Gateway

The IP address of the router on the local area network. For example, 192.168.10.1.

DHCP Lease Time

The amount of time that a computer may have an IP address before it is required to renew the lease. The lease functions just as a lease on an apartment would. The initial lease designates the amount of time before the lease expires. If the tenant wishes to retain the address when the lease is expired then a new lease is established. If the lease expires and the address is no longer needed than another tenant may use the address.

IP Address:

The LAN address that you want to reserve.

MAC Address

To input the MAC address of your system, enter it in manually or connect to the router's Web-Management interface from the system and click the **Copy Your PC's MAC Address** button.

A MAC address is usually located on a sticker on the bottom of a network device. The MAC address is comprised of twelve digits. Each pair of hexadecimal digits are usually separated by dashes or colons such as 00-0D-88-11-22-33 or 00:0D:88:11:22:33. If your network device is a computer and the network card is already located inside the computer, you can connect to the router from the computer and click the **Copy Your PC's MAC Address** button to enter the MAC address.

Network: IPv6 Setting

The screenshot displays the IPv6 Status page of a Trendnet AC1200 Dual Band Wireless Router (TEW-811DRU). The page is divided into a left sidebar and a main content area. The sidebar contains navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, Management, Upload Firmware, Settings Management, File Sharing, Time, System Log, Status, and IPv6 Status. The main content area is titled "IPv6 Status" and includes a sub-section "IPv6 Internal Network Configurations" and "IPv6 Guest Network Configurations". Both tables have columns for Connected Type, Network Status, Network Prefix, IPv6 Default Gateway, and IPv6 DNS Server. The page footer indicates "© Copyright 2013 TRENDnet. All Rights Reserved."

LAN IPv6 Setting

6to4

6to4 is provided as a transition for migrating from IPv4 to IPv6. It allows IPv6 packets to be transmitted over an IPv4 network through the automatic tunneling technology, and routes traffic between 6to4 and IPv6 networks.

Native IPv6 only

Native IPv6 refers to the network where IPv6 is the only transport protocol running.

6to4 + Native IPv6

Support 6to4 and Native IPv6 simultaneously.

DNS server

User need to key in the IPv6 DNS server address which is provided by ISP.

6to4 subnet ID

Specifies, in hexadecimal notation, a subnet ID other than 0

Network: QoS

The screenshot shows the 'Quality of Service Settings' page on a TrendNet AC1200 Dual Band Wireless Router (TEW-811DRU). The page is divided into several sections: QoS Setting, Traffic Class Setting, Inbound Class Setting, and Outbound Class Setting. The QoS Setting section includes options for 'Enable QoS' (Disabled), 'Prioritize ACK' (Enabled), and 'Prioritize ICMP' (Disabled). The Traffic Class Setting section shows 'Default Traffic Class' set to 'Low'. The Inbound Class Setting section shows 'BW Max Inbound' set to 1500 Kbit/s and a table of bandwidth limits for different classes. The Outbound Class Setting section shows 'BW Max Outbound' set to 384 Kbit/s and a table of bandwidth limits for different classes. The page also features a sidebar with navigation options and 'Apply' and 'Cancel' buttons at the bottom.

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

- WAN Setting
- LAN Setting
- IPv6 Setting
- QoS**
- DHCP Client List

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

Quality of Service Settings

This page allows you to configure the QoS feature.

QoS Setting

Enable QoS	Disabled
Prioritize ACK	Enabled
Prioritize ICMP	Disabled

Traffic Class Setting

Default Traffic Class	Low
-----------------------	-----

Inbound Class Setting

Inbound Classes (% Max Input BW)

BW Max Inbound	1500	Kbit/s
View Settings		
Highest	0	0 Kbit/s
High	0	0 Kbit/s
Medium	0	0 Kbit/s
Low	0	0 Kbit/s
Lowest	0	0 Kbit/s

Outbound Class Setting

Outbound Classes (% Max Output BW)

BW Max Outbound	384	Kbit/s
View Settings		
Highest	80	100 307 -- 384 Kbit/s
High	10	100 38 -- 384 Kbit/s
Medium	5	100 19 -- 384 Kbit/s
Low	3	100 11 -- 384 Kbit/s
Lowest	2	85 7 -- 384 Kbit/s

Apply **Cancel**

QoS Rule Add

Add QoS Rule (Outbound)

IP/MAC Address Filter: Any

Protocol Filter: Any

Port Filter: Any

Class Assigned: Highest

Description:

QoS Rule List

Rule No.	Address Type	Address	Protocol	Port Filter	Port No.	Class	Description

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QoS Setting

There are several Maximum upload bandwidth to choose or user defined. QoS is enabled by default. You can disable it in the QoS Setup screen by clearing the **Enable** check box

Traffic Class Setting

User could select the Low/Mid/highest priority that this port's traffic should receive relative to other applications and traffic when accessing the Internet.

Inbound class Setting

For user to limit downlink bandwidth

Outbound Class Setting

For user to limit Min/Max uplink bandwidth

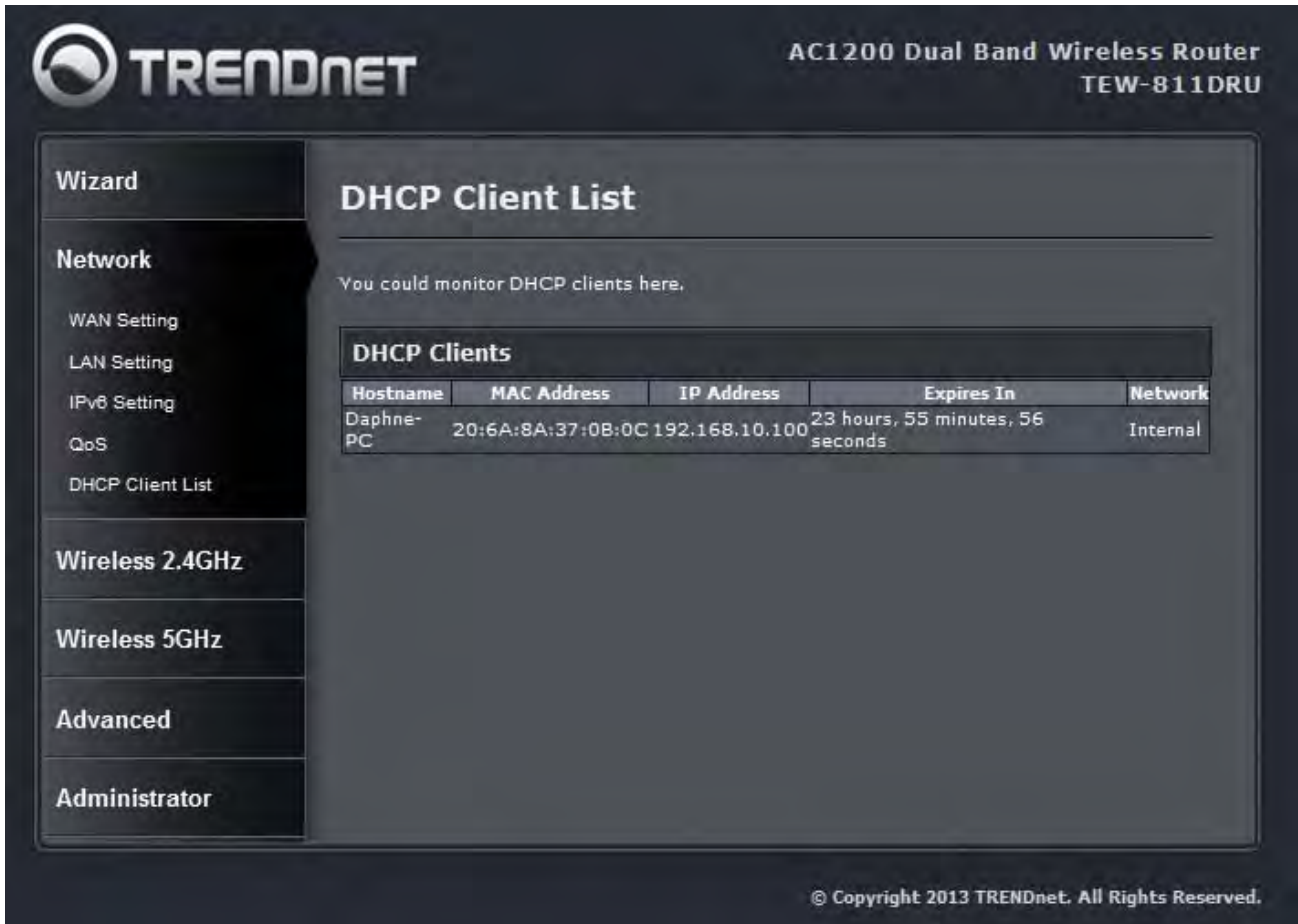
QoS Rule Add

User could select either **TCP**, **UDP**, or both (**TCP/UDP**), and specify the port number or range of port numbers used. User could set priority and limitation by IP/MAC address, Protocol or Port.

QoS List

You can setup QoS per different protocol Application.

Network: DHCP Client List



TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

- WAN Setting
- LAN Setting
- IPv6 Setting
- QoS
- DHCP Client List**

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

DHCP Client List

You could monitor DHCP clients here.

DHCP Clients				
Hostname	MAC Address	IP Address	Expires In	Network
Daphne-PC	20:6A:8A:37:0B:0C	192.168.10.100	23 hours, 55 minutes, 56 seconds	Internal

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In this section you can see the connected LAN devices are currently receiving an IP addresses.

Wireless

Wireless: Basic

The screenshot shows the configuration interface for a Trendnet AC1200 Dual Band Wireless Router (TEW-811DRU). The page is titled "Basic Wireless Settings" and includes a sidebar with navigation options: Wizard, Network, Wireless 2.4GHz (selected), Wireless 5GHz, Advanced, and Administrator. Under "Wireless 2.4GHz", there are sub-options for Basic, Advanced, Security, Guest Network, WPS, and Station List. The main content area contains the following settings:

Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

Wireless Network

Multiple SSID	SSID 1: TRENDnet8121463
Radio On/Off	On
802.11 n mode	Auto
Wireless Name (SSID)	TRENDnet8121463
Broadcast Network Name (SSID)	Enabled
Frequency (Channel)	Auto

Wireless Distribution System (WDS)

AP MAC Address

HT Physical Mode

Channel BandWidth	20 MHz
MCS	Auto

At the bottom of the page, there are two buttons: "Apply" and "Cancel".

Radio On/Off

This indicates the wireless operating status. The wireless can be turned on or off by the slide switch. When the radio is on, the following parameters are in effect.

Wireless Mode

If all of the wireless devices you want to connect with this router can connect in the same transmission mode, you can improve performance slightly by choosing the appropriate wireless mode. If you have some devices that use a different transmission mode, choose the appropriate wireless mode. The TEW-811DRU supports 2.4GHz/5GHz wireless networks. There are many different configuration options available to choose from. Use the drop down list to select the wireless mode.

Note: One wireless mode can be selected can select at any one time. This means that you can only select one of the operating frequency at a time.

Wireless Network Name (SSID)

When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the pre-configured network name. Add up to three additional SSIDs to create virtual wireless networks from one wireless Router Access Point device.

Add Additional Wireless Network Name (SSID)

To add additional wireless Network Names simply add the name to the Multiple SSID field and click on apply at the bottom of the page. When finished, go to the Security section in this Users Guide for wireless security configuration.

Frequency (Channel)

A wireless network uses specific channels in the wireless spectrum to handle communication between clients. Some channels in your area may have interference from other electronic devices. Choose the clearest channel to help optimize the performance and coverage of your wireless network.

Wireless Distribution System (WDS)

When WDS is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs via WDS links. A WDS link is bidirectional; so this AP must know the MAC Address (creates the WDS link) of the other AP, and the other AP must have a WDS link back to this AP. Make sure the APs are configured with same channel.

(Note that WDS security is incompatible with mixed mode, like WPAPSK+WPA2PSK mixed, WEP AUTO and 802.1x, both feature cannot be used at the same time).

Configuring WDS with TEW-811DRU

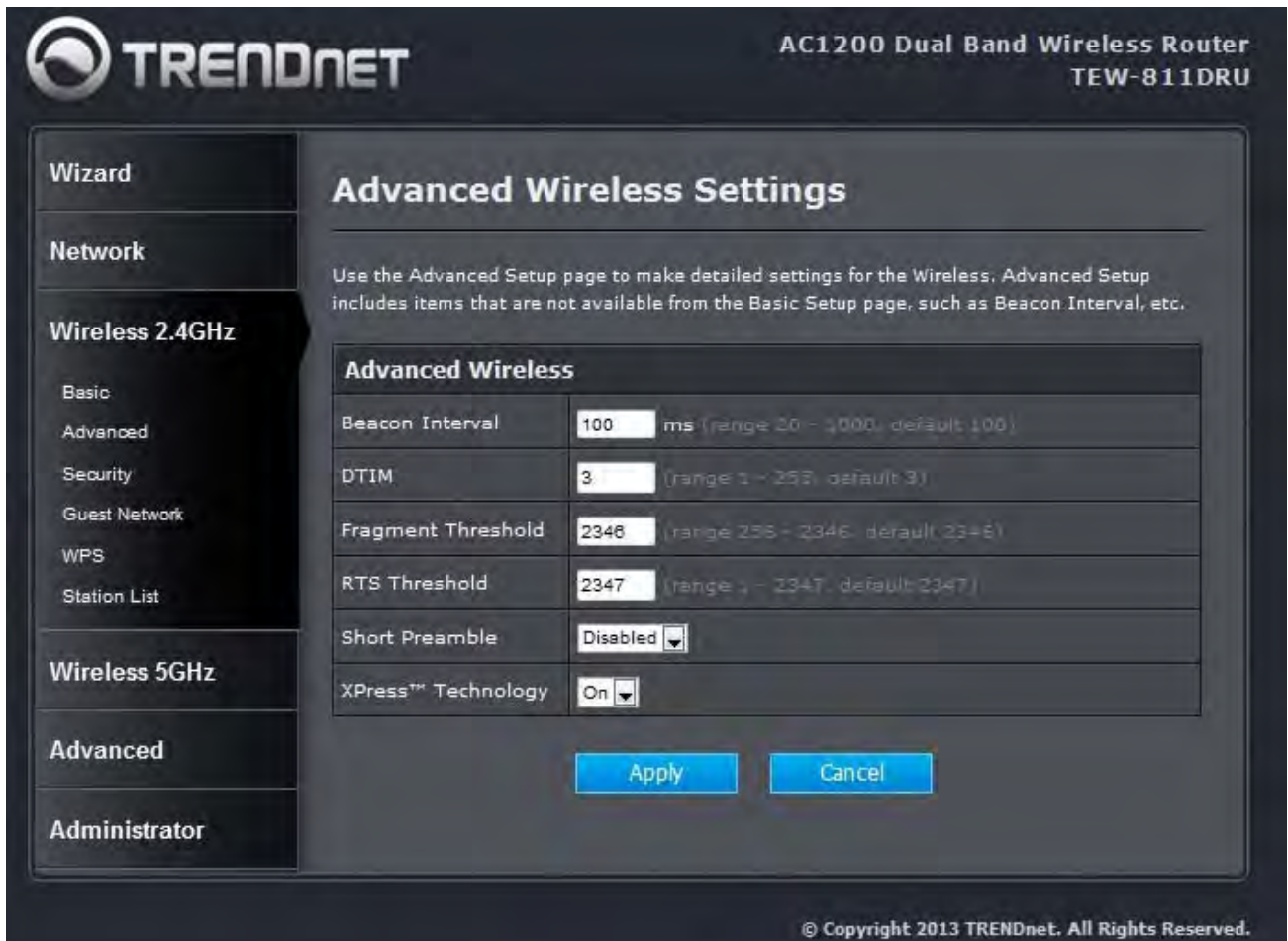
Enable the option for WDS and input the MAC Address of the wireless device that also supports WDS in to the blank fields. You can add up to four additional devices in the spaces provided.

Click on apply at the bottom of the page, to apply your setting changes.

Enable the security seeing in security page, each WDS APs need to use same security setting.

(Note: WDS supports wireless g/n modes. The use multiple Access Point will reduces the overall network throughput to ½ the TEW-811DRU.

Wireless: Advanced



TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

- Basic
- Advanced
- Security
- Guest Network
- WPS
- Station List

Wireless 5GHz

Advanced

Administrator

Advanced Wireless Settings

Use the Advanced Setup page to make detailed settings for the Wireless. Advanced Setup includes items that are not available from the Basic Setup page, such as Beacon Interval, etc.

Advanced Wireless	
Beacon Interval	100 ms (range 20 - 1000, default 100)
DTIM	3 (range 1 - 255, default 3)
Fragment Threshold	2346 (range 235 - 2346, default 2346)
RTS Threshold	2347 (range 1 - 2347, default 2347)
Short Preamble	Disabled
XPress™ Technology	On

Apply Cancel

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Beacon Interval

Beacons are packets sent by a wireless router to synchronize wireless devices. Specify a Beacon Period value between 20 and 1000. The default value is set to 100 milliseconds.

DTIM

A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. When the wireless router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Wireless clients detect the beacons and awaken to receive the broadcast and multicast messages. The default value is 1. Valid settings are between 1 and 255.

Fragmentation Threshold

Wireless frames can be divided into smaller units (fragments) to improve performance in the presence of RF interference and at the limits of RF coverage. Fragmentation will occur when frame size in bytes is greater than the Fragmentation Threshold. This setting should remain at

its default value of 2346 bytes. Setting the Fragmentation value too low may result in poor performance.

RTS Threshold

When an excessive number of wireless packet collisions are occurring, wireless performance can be improved by using the RTS/CTS (Request to Send/Clear to Send) handshake protocol. The wireless transmitter will begin to send RTS frames (and wait for CTS) when data frame size in bytes is greater than the RTS Threshold. This setting should remain at its default value of 2346 bytes.

Short Preamble and Slot

Using a short (400ns) guard interval can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections. Select the option that works best for your installation.

Security Mode

Unless one of these encryption modes is selected, wireless transmissions to and from your wireless network can be easily intercepted and interpreted by unauthorized users.

WPA-

Both of these options select some variant of Wi-Fi Protected Access (WPA) -- security standards published by the Wi-Fi Alliance. The WPA Mode further refines the variant that the router should employ.

WPA Mode: WPA is the older standard; select this option if the clients that will be used with the router only support the older standard. WPA2 is the newer implementation of the stronger IEEE 802.11i security standard. With the "WPA2" option, the router tries WPA2 first, but falls back to WPA if the client only supports WPA. With the "WPA2 Only" option, the router associates only with clients that also support WPA2 security.

Cipher Type: The encryption algorithm used to secure the data communication. TKIP (Temporal Key Integrity Protocol) provides per-packet key generation and is based on WEP. AES (Advanced Encryption Standard) is a very secure block based encryption. With the "TKIP and AES" option, the router negotiates the cipher type with the client, and uses AES when available.

Group Key Update Interval: The amount of time before the group key used for broadcast and multicast data is changed.

WPA-PSK

This option uses Wi-Fi Protected Access with a Pre-Shared Key (PSK).

Pre-Shared Key: The key is entered as a pass-phrase of up to 63 alphanumeric characters in ASCII (American Standard Code for Information Interchange) format at both ends of the wireless connection. It cannot be shorter than eight characters, although for proper security it needs to be of ample length and should not be a commonly known phrase. This phrase is used to generate session keys that are unique for each wireless client.

Wireless MAC Filtering

Choose the type of MAC filtering needed.

Turn MAC Filtering Disable: When "Disable" is selected, MAC addresses are not used to control network access.

Add MAC Filtering Rule

Use this section to add MAC addresses to the list below.

MAC Address

Enter the MAC address of a computer that you want to control with MAC filtering. Computers that have obtained an IP address from the router's DHCP server will be in the DHCP Client List. Select a device from the drop down menu.

The rule of thumb:

In mixed mode, multicast key has to be TKIP, but unicast key can be different per stations. In WPA or WPA2 only mode, unicast and multicast key can be only AES for WPA2, and TKIP for WPA. (AES means the unicast and multicast key are all AES. TKIP/AES means multicast is TKIP. But unicast can be AES or TKIP, which depends on the peer.)

Wireless: Guest Network

The screenshot shows the web interface of a TrendNet AC1200 Dual Band Wireless Router (TEW-811DRU). The interface is in a dark theme. On the left is a navigation sidebar with the following menu items: Wizard, Network, Wireless 2.4GHz (selected), Basic, Advanced, Security, Guest Network, WPS, Station List, Wireless 5GHz, Advanced, and Administrator. The main content area is titled "Guest Network" and contains the following configuration options:

- Guest Network**
 - Enabled:
 - Wireless Name (SSID):
 - Internet Access Only: (prevents guests from accessing the private LAN network)
 - Wireless Client Isolation: (isolate guests from each other)
- Security Policy**
 - Security Mode:

At the bottom of the main content area, there is a link for "Advanced Guest Network Settings" and two buttons: "Apply" and "Cancel".

Guest Network

Enter the SSID of Guest Network, this allow families to share their home network with friends and relatives in a controlled manner without needing to expose private Wi-Fi access codes or other personal data.

A guest network is a small section of an organization's computer network designed for use by temporary visitors. Besides helping to keep an organization's internal information private, guest networks also help avoid spreading any computer worms that visitors may have on their systems.

Wireless: WPS

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

- Basic
- Advanced
- Security
- Guest Network
- WPS
- Station List

Wireless 5GHz

Advanced

Administrator

WPS

This page allows you to configure WPS.

WPS Config

WPS Configuration	Enabled ▾
-------------------	-----------

WPS Summary

WPS Current Status	Init
WPS Current Mode	Unconfigured AP
Current SSID	TRENDnet8121463
Current Authentication Type	WPA2-PSK
Current Encryption Type	AES
Current PSK	Click here to display
Device PIN	19789323

WPS Action

Station PIN	<input type="text"/>	Note: Empty for PBC method.
<input type="button" value="Add Enrollee"/>		

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Enable

Enable the WPS feature.

PIN Settings

A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator ("admin" account) can change or reset the PIN.

Current PIN

Shows the current value of the router's PIN.

Reset To WPS Default

Restore the default PIN of the router.

Generate New PIN

Create a random number that is a valid PIN. This becomes the router's PIN. You can then copy this PIN to the user interface of the registrar.

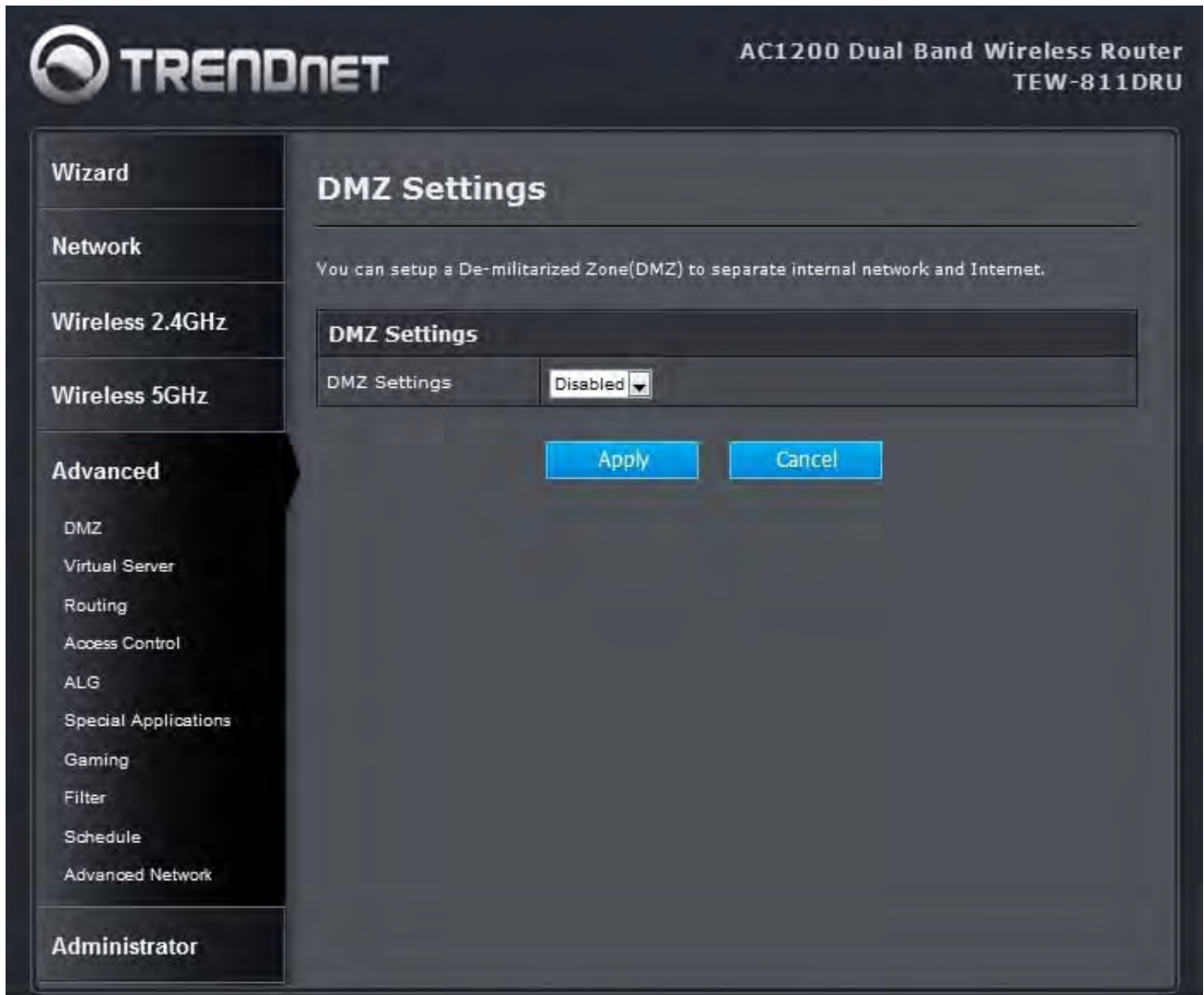
Wireless: Station List

The screenshot shows the web interface of a Trendnet AC1200 Dual Band Wireless Router (TEW-811DRU). The interface is dark-themed with a sidebar on the left and a main content area on the right. The sidebar contains navigation menus for 'Wizard', 'Network', 'Wireless 2.4GHz', 'Wireless 5GHz', 'Advanced', and 'Administrator'. The 'Wireless 2.4GHz' menu is expanded, showing sub-options: 'Basic', 'Advanced', 'Security', 'Guest Network', 'WPS', and 'Station List'. The 'Station List' option is selected. The main content area is titled 'Station List' and contains the text: 'You could monitor stations which associated to this AP here.' Below this text is a table with the following columns: 'MAC Address', 'Association Time', 'Authorized', 'WMM Link', 'Power Save', and 'APSD Default'. The table is currently empty. At the bottom right of the interface, there is a copyright notice: '© Copyright 2013 TRENDnet. All Rights Reserved.'

All the wireless clients connecting to the router will be shown here, you could monitor your network and prevent any unauthorized wireless connection easily.

Advanced

Advanced: DMZ



DMZ Setting

DMZ means "Demilitarized Zone." If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.

When a LAN host is configured as a DMZ host, it becomes the destination for all incoming packets that do not match some other incoming session or rule. If any other ingress rule is in place, that will be used instead of sending packets to the DMZ host; so, an active session, virtual server, active port trigger, or port forwarding rule will take priority over sending a packet

to the DMZ host. (The DMZ policy resembles a default port forwarding rule that forwards every port that is not specifically sent anywhere else.)

The router provides only limited firewall protection for the DMZ host. The router does not forward a TCP packet that does not match an active DMZ session, unless it is a connection establishment packet (SYN). Except for this limited protection, the DMZ host is effectively "outside the firewall". Anyone considering using a DMZ host should also consider running a firewall on that DMZ host system to provide additional protection.

Packets received by the DMZ host have their IP addresses translated from the WAN-side IP address of the router to the LAN-side IP address of the DMZ host. However, port numbers are not translated; so applications on the DMZ host can depend on specific port numbers.

The DMZ capability is just one of several means for allowing incoming requests that might appear unsolicited to the NAT. In general, the DMZ host should be used only if there are no other alternatives, because it is much more exposed to cyberattacks than any other system on the LAN. Thought should be given to using other configurations instead: a virtual server, a port forwarding rule, or a port trigger. Virtual servers open one port for incoming sessions bound for a specific application (and also allow port redirection and the use of ALGs).

Port forwarding is rather like a selective DMZ, where incoming traffic targeted at one or more ports is forwarded to a specific LAN host (thereby not exposing as many ports as a DMZ host). Port triggering is a special form of port forwarding, which is activated by outgoing traffic, and for which ports are only forwarded while the trigger is active.

Few applications truly require the use of the DMZ host. Following are examples of when a

DMZ host might be required:

- A host needs to support several applications that might use overlapping ingress ports such that two port forwarding rules cannot be used because they would potentially be in conflict.
- To handle incoming connections that use a protocol other than ICMP, TCP, UDP, and IGMP (also GRE and ESP, when these protocols are enabled by the PPTP and IPsec)

Enable DMZ

Putting a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

Enable

Specifies whether the entry will be active or inactive.

IP Address

The IP address of the system on your internal network that will provide the virtual service, for example **192.168.10.50**. You can select a computer from the list of DHCP clients in the "Computer Name" drop-down menu, or you can manually enter the IP address of the server computer.

Protocol

Select the protocol used by the service. The common choices -- UDP, TCP -- can be selected from the drop-down menu.

Private Port

The port that will be used on your internal network.

Public Port

The port that will be accessed from the Internet.

Schedule

Select a schedule for when the service will be enabled. If you do not see the schedule you need in the list of schedules.

Advanced: Routing

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

DMZ

Virtual Server

Routing

Access Control

ALG

Special Applications

Gaming

Filter

Schedule

Advanced Network

Administrator

Static Route Settings

The static routing option allows you to define fixed routes to specific destinations.

WAN Static Routes

IP Address	Subnet Mask	Gateway	Metric

LAN Static Routes

IP Address	Subnet Mask	Gateway	Metric

Apply Cancel

Routing Table

IP	Netmask	Gateway	Metric	Interface
192.168.20.0	255.255.255.0	0.0.0.0	0	br1
192.168.10.0	255.255.255.0	0.0.0.0	0	br0
127.0.0.0	255.0.0.0	0.0.0.0	0	lo

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Add/Edit Route

Adds a new route to the IP routing table or edits an existing route.

Destination IP

The IP address of packets that will take this route.

Gateway

Specifies the next hop to be taken if this route is used. A gateway of 0.0.0.0 implies there is no next hop, and the IP address matched is directly connected to the router on the interface specified: LAN or WAN.

Metric

The route metric is a value from 1 to 16 that indicates the cost of using this route. A value of 1 is the lowest cost, and 15 is the highest cost. A value of 16 indicates that the route is not reachable from this router. When trying to reach a particular destination, computers on your network will select the best route, ignoring unreachable routes.

Interface

Specifies the interface -- LAN or WAN -- that the IP packet must use to transit out of the router, when this route is used.

Clear

Re-initialize this area of the screen, discarding any changes you have made.

Routes List

The section shows the current routing table entries. Certain required routes are predefined and cannot be changed. Routes that you add can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Route" section is activated for editing. Click the Enable checkbox at the left to directly activate or de-activate the entry.

Note: When Access Control is disabled, every device on the LAN has unrestricted access to the Internet. However, if you enable Access Control, Internet access is restricted for those devices that have an Access Control Policy configured for them. All other devices have unrestricted access to the Internet.

ALG

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

- DMZ
- Virtual Server
- Routing
- Access Control
- ALG
- Special Applications
- Gaming
- Filter
- Schedule
- Advanced Network

Administrator

Application Level Gateway (ALG) Configuration

ALG configuration allows users to disable some application service.

Service Name	Description	Enabled
Email Receiving	Post Office Protocol - Version 3 (POP3)	<input checked="" type="checkbox"/>
Email Receiving	Simple Mail Transfer Protocol (SMTP)	<input checked="" type="checkbox"/>
Streaming Media	Real Time Transport Protocol (RTP)	<input checked="" type="checkbox"/>
Streaming Media - VoIP	Session Initiation Protocol (SIP)	<input checked="" type="checkbox"/>
Streaming Media - VoIP	NetMeeting (H.323)	<input checked="" type="checkbox"/>
File Transfer	File Transfer Protocol (FTP)	<input checked="" type="checkbox"/>
File Transfer	Trivial File Transfer Protocol (TFTP)	<input checked="" type="checkbox"/>
Remote Control	Telnet	<input checked="" type="checkbox"/>
Instant Messaging	MSN Messenger	<input checked="" type="checkbox"/>
IPSec		<input checked="" type="checkbox"/>

Apply Cancel

Application Level Gateway(ALG)

By default, the ALG feature is enabled. ALG configuration allows users to disable some application service.

Add/Edit Port Trigger Rule

Enable

Specifies whether the entry will be active or inactive.

Name

Enter a name for the Special Application Rule, for example **Game App**, which will help you identify the rule in the future. Alternatively, you can select from the **Application** list of common applications.

Protocol

Select the protocol used by the service. The common choices -- UDP, TCP, and both UDP and TCP -- can be selected from the drop-down menu.

Trigger Port

Enter the outgoing port range used by your application (for example **6500-6700**).

Schedule

Select a schedule for when this rule is in effect.

Clear

Re-initialize this area of the screen, discarding any changes you have made.

Port Trigger Rule List

This is a list of the defined application rules. Click the Enable checkbox at the left to directly activate or de-activate the entry. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon.

Add/Edit Port Range Rule

Use this section to add a Port Range Rule to the following list or to edit a rule already in the list.

Rule Enable

Specifies whether the entry will be active or inactive.

IP Address

Enter the local network IP address of the system hosting the server, for example **192.168.10.50**.

You can select a computer from the list of DHCP clients in the "Computer Name" drop-down menu, or you can manually enter the IP address of the server computer.

TCP Ports to Open

Enter the TCP ports to open (for example **6159-6180, 99**).

UDP Ports to Open

Enter the UDP ports to open (for example **6159-6180, 99**).

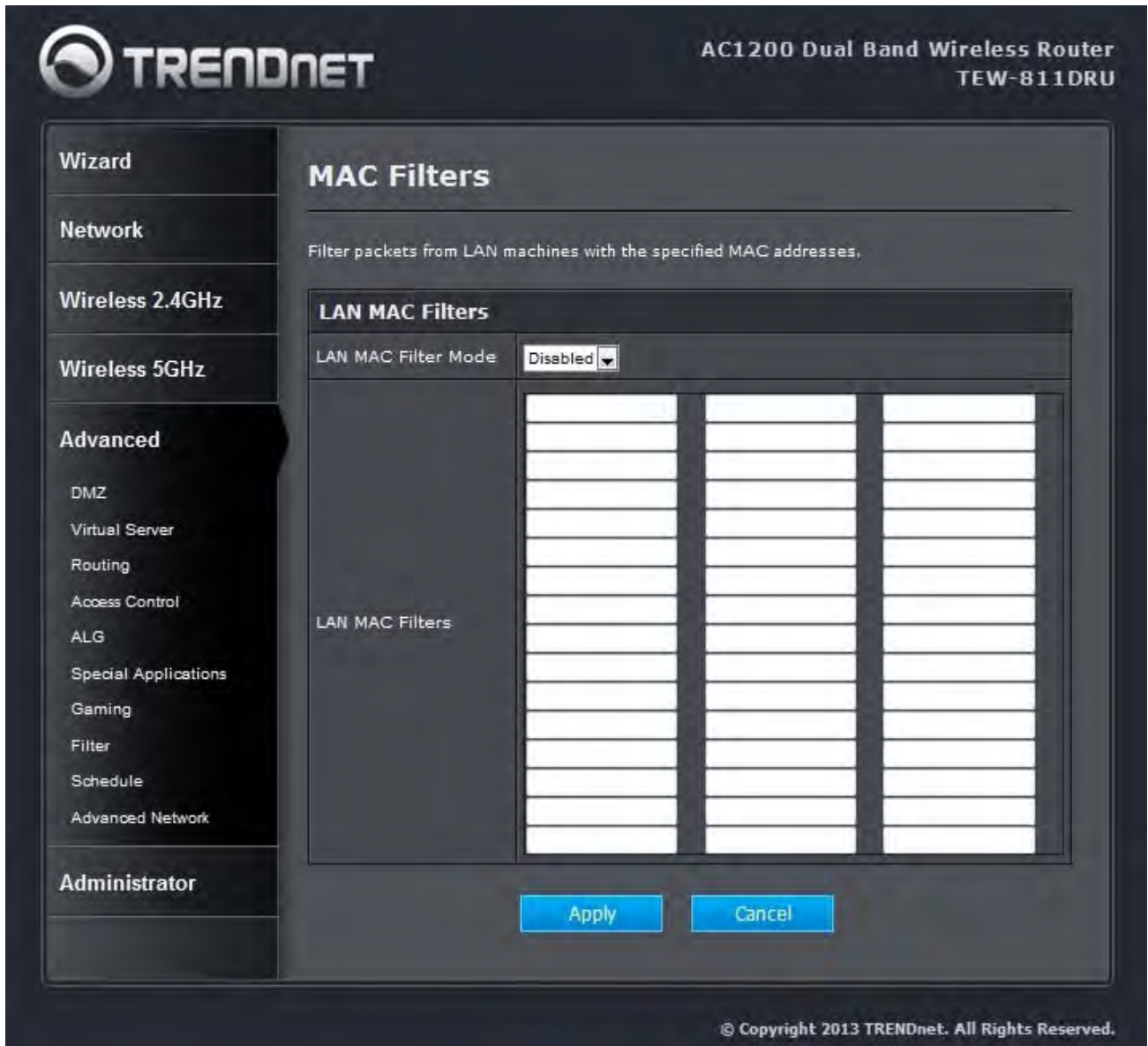
Schedule

Select a schedule for the times when this rule is in effect.

Clear

Re-initialize this area of the screen, discarding any changes you have made.

Advanced: Filter



Add/Edit Filter Rule

Here you can add entries to the Filter Rules List below, or edit existing entries.

Action

The rule can either Allow or Deny messages.

Filter Rules List

The section lists the current Inbound Filter Rules. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Filter Rule" section is activated for editing.

In addition to the filters listed here, two predefined filters are available wherever filters can be applied:


Allow All

Permit any WAN user to access the related capability.

Deny All

Prevent all WAN users from accessing the related capability. (LAN users are not affected by Filter Rules.)

Advanced: Schedule



AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

DMZ

Virtual Server

Routing

Access Control

ALG

Special Applications

Gaming

Filter

Schedule

Advanced Network

Administrator

Schedule

Define schedule rules for various firewall features.

Rule Name	Days	Times Start - End
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00
<input type="text"/>	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat	00:00 - 00:00

Apply
Cancel

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Add/Edit Schedule Rule

In this section you can add entries to the Schedule Rules List below or edit existing entries.

Name

Give the schedule a name that is meaningful to you, such as "Weekday rule".

Day(s)

Place a checkmark in the boxes for the desired days or select the All Week radio button to select all seven days of the week.

All Day - 24 hrs

Select this option if you want this schedule in effect all day for the selected day(s).

Start Time

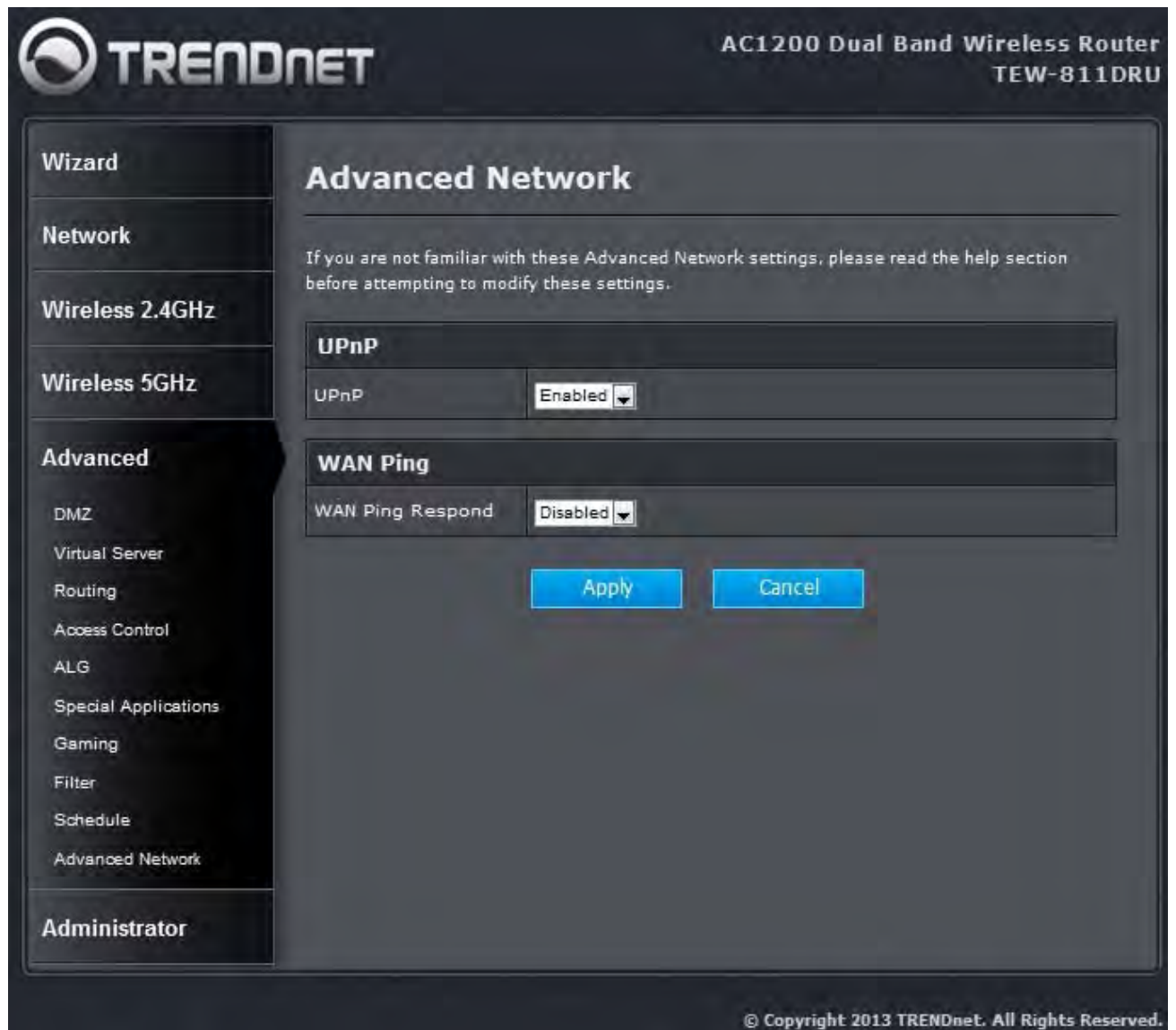
If you don't use the All Day option, then you enter the time here. The start time is entered in two fields. The first box is for the hour and the second box is for the minute. Email events are normally triggered only by the start time. End Time

The end time is entered in the same format as the start time. The hour in the first box and the minutes in the second box. The end time is used for most other rules, but is not normally used for email events.

Schedule Rules List

This section shows the currently defined Schedule Rules. An entry can be changed by clicking the Edit icon or can be deleted by clicking the Delete icon. When you click the Edit icon, the item is highlighted, and the "Edit Schedule Rule" section is activated for editing.

Advanced: Advanced Network



UPnP

By default, the UPnP feature is enabled. Universal Plug and Play (UPnP) is a set of networking protocols for primarily residential networks without enterprise class devices that permits networked devices, such as personal computers, printers, Internet gateways, Wi-Fi access points and mobile devices to seamlessly discover each other's presence on the network and establish functional network services for data sharing, communications, and entertainment.

WAN Ping

By default, the WAN Ping Respond feature is disabled. Enable WAN Ping Respond will reply information of router to outside network.

Administrator

Administrator: Management

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

- Management
- Upload Firmware
- Settings Management
- File Sharing
- Time
- System Log
- Status
- IPv6 Status

System Management

You may configure administrator account and password.

Administrator Settings

Account	<input type="text" value="admin"/>
Password	<input type="password" value="....."/> <small>(Max Length: 14 characters)</small>
Idle Timeout	<input type="text" value="600"/> (120-3600 seconds)

Device Name Settings

Device Name	<input type="text" value="TEW-811DRU"/>
-------------	---

Device URL Settings

Device URL	<input type="text" value="tew-811dru.trendnet"/>
------------	--

DDNS Settings

Dynamic DNS Provider	<input type="text" value="None"/>
Host Name	<input type="text"/>
Account	<input type="text"/>
Password	<input type="password"/>

Remote Management

Remote Control (via WAN)	<input type="text" value="Disable"/>
Remote Port	<input type="text" value="8080"/>

Admin Password

Enter a password for the user "admin", who will have full access to the Web-based management interface.

Device Name

The name of the router can be changed here.

Enable Dynamic DNS

Enable this option only if you have purchased your own domain name and registered with a dynamic DNS service provider. The following parameters are displayed when the option is enabled.

Dynamic DNS Provider

Select a dynamic DNS service provider from the pull-down list.

Host Name

Enter your host name, fully qualified; for example: **myhost.mydomain.net**.

Account

Enter the account provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

Password

Enter the password provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

Administrator: Upload Firmware

The screenshot displays the Trendnet web interface for the AC1200 Dual Band Wireless Router (TEW-811DRU). The interface is dark-themed with a sidebar on the left containing navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator (highlighted), Management, Upload Firmware, Settings Management, File Sharing, Time, System Log, Status, and IPv6 Status. The main content area is titled 'Upgrade Firmware' and includes a warning message: 'Upgrade the firmware to obtain new functionality. It takes about 3 minutes to upload & upgrade. Don't unplug power & router. If something wrong will bring up the screen.' Below this is a form titled 'Upload Firmware' with a 'Location' label, an empty text input field, and a file selection icon. At the bottom of the form are 'Apply' and 'Cancel' buttons. The footer of the interface reads '© Copyright 2013 TRENDnet. All Rights Reserved.'

Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the router.

Administrator: Setting Management

Export Settings

This option allows you to export and then save the router's configuration to a file on your computer. Be sure to save the configuration before performing a firmware upgrade.

Import Settings

Use this option to restore previously saved router configuration settings.

Load Factory Defaults

This option restores all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost. If you want to save your router configuration settings, use the **Export Settings** option above.

System Reboot

This restarts the router. It is useful for restarting when you are not near the device.

Administrator: file sharing

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

- Management
- Upload Firmware
- Settings Management
- File Sharing
- Time
- System Log
- Status
- IPv6 Status

File Sharing

Enable the SAMBA server to share the files on USB storage.

SAMBA Server Information

Server Status	Enabled ▾
Server Name	TEW811DRU_SMB
Workgroup	WORKGROUP
Description	

Administrator

User Name	admin
Password	admin

User Account List

User Name	Password	Permission	Enabled
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>

FTP Server Information

Server Status	Enabled ▾
Language (Codepage)	Traditional Chinese ▾

Administrator

User Name	admin
Password	admin

User Account List

User Name	Password	Permission	Enabled
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>
		Read Only ▾	<input type="checkbox"/>

Apply

Cancel



File Sharing

Setting different computer in the same workgroup, allowing data from computers on a network to be accessed by other computers on the network with different levels of access rights.

User Account List

Enter username / password of each computer and setting permission to limit user account could read file only or could read/write file.

Administrator: Time

The screenshot shows the Trendnet AC1200 Dual Band Wireless Router (TEW-811DRU) administrator interface. The left sidebar contains navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, Management, Upload Firmware, Settings Management, File Sharing, Time, System Log, Status, and IPv6 Status. The main content area is titled "Time Settings" and includes the following sections:

- Time Configuration:** System Time: Sun Jan 1 00:12:45 2012
- Daylight Saving Time:** Enable Daylight Saving:
- NTP Settings:** Enable NTP Server:
- Date and Time Settings:** Date And Time: Year (2012), Month (Jan), Day (01), Hour (00), Minute (12), Second (45)

Buttons for "Apply" and "Cancel" are located at the bottom of the settings area. The footer contains the copyright notice: © Copyright 2013 TRENDnet. All Rights Reserved.

Time Configuration

Current Router Time

Displays the time currently maintained by the router. If this is not correct, use the following options to configure the time correctly.

Automatic Time Configuration

Enable NTP Server

Select this option if you want to synchronize the router's clock to a Network Time Server over the Internet. If you are using schedules or logs, this is the best way to ensure that the schedules and logs are kept accurate. Note that, even when NTP Server is enabled, you must still choose a time zone and set the daylight saving parameters.

NTP Server Used

Select a Network Time Server for synchronization. You can type in the address of a time server or select one from the list. If you have trouble using one server, select another.

Set the Date and Time Manually

If you do not have the NTP Server option in effect, you can either manually set the time for your router here.

Administrator: System log

The screenshot displays the Trendnet web interface for the AC1200 Dual Band Wireless Router (TEW-811DRU). The interface is dark-themed with a sidebar on the left containing navigation options: Wizard, Network, Wireless 2.4GHz, Wireless 5GHz, Advanced, Administrator, Management, Upload Firmware, Settings Management, File Sharing, Time, System Log, Status, and IPv6 Status. The main content area is titled "System Log" and includes the following elements:

- A header section with the text: "This page can be used to set remote log server and show the system log."
- A "System Log" section with a toggle for "Enable System Log" (currently disabled) and an "Apply" button.
- A large empty white box representing the system log output.
- Buttons for "Refresh" and "Clear" at the bottom of the log area.

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This page can be used to set remote log server and show the system log.

Administrator: Status

TRENDNET AC1200 Dual Band Wireless Router
TEW-811DRU

Wizard

Network

Wireless 2.4GHz

Wireless 5GHz

Advanced

Administrator

- Management
- Upload Firmware
- Settings Management
- File Sharing
- Time
- System Log
- Status
- IPv6 Status

Status

The device status.

System Info	
Firmware Version	0.0.0.2, Mar 25, 2013
System Time	Sun Jan 1 03:37:24 2012
System Up Time	03:37:30

Internet Configurations	
Connected Type	DHCP Client
WAN IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary Domain Name Server	0.0.0.0
Secondary Domain Name Server	0.0.0.0

[Renew](#) [Release](#)

LAN	
MAC Address	00:90:4C:0F:F4:D2
IP Address	192.168.10.1
Subnet Mask	255.255.255.0

2.4GHz Wireless	
MAC Address	00:90:4C:0E:54:D2
Channel	36
Network Name (SSID) / Security Mode	TRENDnet8121463/WPA2-PSK
Multiple SSID1 / Security Mode	
Multiple SSID2 / Security Mode	
Multiple SSID3 / Security Mode	
5GHz Wireless	
MAC Address	
Channel	
Network Name (SSID) / Security Mode	
Multiple SSID1 / Security Mode	
Multiple SSID2 / Security Mode	
Multiple SSID3 / Security Mode	

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The device status.

Glossary

8

802.11

A family of specifications for wireless local area networks (WLANs) developed by a working group of the Institute of Electrical and Electronics Engineers (IEEE).

A

Access Control List

ACL. This is a database of network devices that are allowed to access resources on the network.

Access Point

AP. Device that allows wireless clients to connect to it and access the network

ActiveX

A Microsoft specification for the interaction of software components.

Address Resolution Protocol

ARP. Used to map MAC addresses to IP addresses so that conversions can be made in both directions.

Ad-hoc network

Peer-to-Peer network between wireless clients

ADSL

Asymmetric Digital Subscriber Line

Advanced Encryption Standard

AES. Government encryption standard

Alphanumeric

Characters A-Z and 0-9

Antenna

Used to transmit and receive RF signals.

AppleTalk

A set of Local Area Network protocols developed by Apple for their computer systems

AppleTalk Address Resolution Protocol

AARP. Used to map the MAC addresses of Apple computers to their AppleTalk network addresses, so that conversions can be made in both directions.

Application layer

7th Layer of the OSI model. Provides services to applications to ensure that they can communicate properly with other applications on a network.

ASCII

American Standard Code for Information Interchange. This system of characters is most commonly used for text files

Attenuation

The loss in strength of digital and analog signals. The loss is greater when the signal is being transmitted over long distances.

Authentication

To provide credentials, like a Password, in order to verify that the person or device is really who they are claiming to be

Automatic Private IP Addressing

APIPA. An IP address that that a Windows computer will assign itself when it is configured to obtain an IP address automatically but no DHCP server is available on the network

B

Backward Compatible

The ability for new devices to communicate and interact with older legacy devices to guarantee interoperability

Bandwidth

The maximum amount of bytes or bits per second that can be transmitted to and from a network device

Basic Input/Output System

BIOS. A program that the processor of a computer uses to startup the system once it is turned on

Baud

Data transmission speed

Beacon

A data frame by which one of the stations in a Wi-Fi network periodically broadcasts network control data to other wireless stations.

Bit rate

The amount of bits that pass in given amount of time

Bit/sec

Bits per second

BOOTP

Bootstrap Protocol. Allows for computers to be booted up and given an IP address with no user intervention

Bottleneck

A time during processes when something causes the process to slowdown or stop all together

Broadband

A wide band of frequencies available for transmitting data

Broadcast

Transmitting data in all directions at once

Browser

A program that allows you to access resources on the web and provides them to you graphically

C**Cable modem**

A device that allows you to connect a computer up to a coaxial cable and receive Internet access from your Cable provider

CardBus

A newer version of the PC Card or PCMCIA interface. It supports a 32-bit data path, DMA, and consumes less voltage

CAT 5

Category 5. Used for 10/100 Mbps or 1Gbps Ethernet connections

Client

A program or user that requests data from a server

Collision

When do two devices on the same Ethernet network try and transmit data at the exact same time.

Cookie

Information that is stored on the hard drive of your computer that holds your preferences to the site that gave your computer the cookie

D

Data

Information that has been translated into binary so that it can be processed or moved to another device

Data Encryption Standard

Uses a randomly selected 56-bit key that must be known by both the sender and the receiver when information is exchanged

Database

Organizes information so that it can be managed updated, as well as easily accessed by users or applications.

Data-Link layer

The second layer of the OSI model. Controls the movement of data on the physical link of a network

DB-25

A 25 pin male connector for attaching External modems or RS-232 serial devices

DB-9

A 9 pin connector for RS-232 connections

dBd

Decibels related to dipole antenna

dBi

Decibels relative to isotropic radiator

dBm

Decibels relative to one milliwatt

Decrypt

To unscramble an encrypted message back into plain text

Default

A predetermined value or setting that is used by a program when no user input has been entered for this value or setting

Demilitarized zone

DMZ: A single computer or group of computers that can be accessed by both users on the Internet as well as users on the Local Network, but that is not protected by the same security as the Local Network.

DHCP

Dynamic Host Configuration Protocol: Used to automatically assign IP addresses from a predefined pool of addresses to computers or devices that request them

Digital certificate:

An electronic method of providing credentials to a server in order to have access to it or a network

Direct Sequence Spread Spectrum

DSSS: Modulation technique used by 802.11b wireless devices

DMZ

"Demilitarized Zone". A computer that logically sits in a "no-mans land" between the LAN and the WAN. The DMZ computer trades some of the protection of the router's security mechanisms for the convenience of being directly addressable from the Internet.

DNS

Domain Name System: Translates Domain Names to IP addresses

Domain name

A name that is associated with an IP address

Download

To send a request from one computer to another and have the file transmitted back to the requesting computer

DSL

Digital Subscriber Line. High bandwidth Internet connection over telephone lines

Duplex

Sending and Receiving data transmissions at the same time

Dynamic DNS service

Dynamic DNS is provided by companies to allow users with Dynamic IP addresses to obtain a Domain Name that will always be linked to their changing IP address. The IP address is updated by either client software running on a computer or by a router that supports Dynamic DNS, whenever the IP address changes

Dynamic IP address

IP address that is assigned by a DHCP server and that may change. Cable Internet providers usually use this method to assign IP addresses to their customers.

E

EAP

Extensible Authentication Protocol

Email

Electronic Mail is a computer-stored message that is transmitted over the Internet

Encryption

Converting data into cyphertext so that it cannot be easily read

Ethernet

The most widely used technology for Local Area Networks.

F

Fiber optic

A way of sending data through light impulses over glass or plastic wire or fiber

File server

A computer on a network that stores data so that the other computers on the network can all access it

File sharing

Allowing data from computers on a network to be accessed by other computers on the network with different levels of access rights

Firewall

A device that protects resources of the Local Area Network from unauthorized users outside of the local network

Firmware

Programming that is inserted into a hardware device that tells it how to function

Fragmentation

Breaking up data into smaller pieces to make it easier to store

FTP

File Transfer Protocol. Easiest way to transfer files between computers on the Internet

Full-duplex

Sending and Receiving data at the same time

G

Gain

The amount an amplifier boosts the wireless signal

Gateway

A device that connects your network to another, like the internet

Gbps

Gigabits per second

Gigabit Ethernet

Transmission technology that provides a data rate of 1 billion bits per second

GUI

Graphical user interface

H

H.323

A standard that provides consistency of voice and video transmissions and compatibility for videoconferencing devices

Half-duplex

Data cannot be transmitted and received at the same time

Hashing

Transforming a string of characters into a shorter string with a predefined length

Hexadecimal

Characters 0-9 and A-F

Hop

The action of data packets being transmitted from one router to another

Host

Computer on a network

HTTP

Hypertext Transfer Protocol is used to transfer files from HTTP servers (web servers) to HTTP clients (web browsers)

HTTPS

HTTP over SSL is used to encrypt and decrypt HTTP transmissions

Hub

A networking device that connects multiple devices together

ICMP

Internet Control Message Protocol

IEEE

Institute of Electrical and Electronics Engineers

IGMP

Internet Group Management Protocol is used to make sure that computers can report their multicast group membership to adjacent routers

IIS

Internet Information Server is a WEB server and FTP server provided by Microsoft

IKE

Internet Key Exchange is used to ensure security for VPN connections

Infrastructure

In terms of a wireless network, this is when wireless clients use an Access Point to gain access to the network

Internet

A system of worldwide networks which use TCP/IP to allow for resources to be accessed from computers around the world

Internet Explorer

A World Wide Web browser created and provided by Microsoft

Internet Protocol

The method of transferring data from one computer to another on the Internet

Internet Protocol Security

IPsec provides security at the packet processing layer of network communication

Internet Service Provider

An ISP provides access to the Internet to individuals or companies

Intranet

A private network

Intrusion Detection

A type of security that scans a network to detect attacks coming from inside and outside of the network

IP

Internet Protocol

IP address

A 32-bit number, when talking about Internet Protocol Version 4, that identifies each computer that transmits data on the Internet or on an Intranet

IPsec

Internet Protocol Security

IPX

Internetwork Packet Exchange is a networking protocol developed by Novell to enable their Netware clients and servers to communicate

ISP

Internet Service Provider

J

Java

A programming language used to create programs and applets for web pages

K

Kbps

Kilobits per second

Kbyte

Kilobyte

L

L2TP

Layer 2 Tunneling Protocol

LAN

Local Area Network

Latency

The amount of time that it takes a packet to get from the one point to another on a network. Also referred to as delay

LED

Light Emitting Diode

Legacy

Older devices or technology

Local Area Network

A group of computers in a building that usually access files from a server

LPR/LPD

"Line Printer Requestor"/"Line Printer Daemon". A TCP/IP protocol for transmitting streams of printer data.

M

MAC Address

A unique hardware ID assigned to every Ethernet adapter by the manufacturer.

Mbps

Megabits per second

MDI

Medium Dependent Interface is an Ethernet port for a connection to a straight-through cable

MDIX

Medium Dependent Interface Crossover, is an Ethernet port for a connection to a crossover cable

MIB

Management Information Base is a set of objects that can be managed by using SNMP

Modem

A device that Modulates digital signals from a computer to an analog signal in order to transmit the signal over phone lines. It also Demodulates the analog signals coming from the phone lines to digital signals for your computer

MPPE

Microsoft Point-to-Point Encryption is used to secure data transmissions over PPTP connections

MTU

Maximum Transmission Unit is the largest packet that can be transmitted on a packet-based network like the Internet

Multicast

Sending data from one device to many devices on a network

N

NAT

Network Address Translation allows many private IP addresses to connect to the Internet, or another network, through one IP address

NetBEUI

NetBIOS Extended User Interface is a Local Area Network communication protocol. This is an updated version of NetBIOS

NetBIOS

Network Basic Input/Output System

Netmask

Determines what portion of an IP address designates the Network and which part designates the Host

Network Interface Card

A card installed in a computer or built onto the motherboard that allows the computer to connect to a network

Network Layer

The third layer of the OSI model which handles the routing of traffic on a network

Network Time Protocol

Used to synchronize the time of all the computers in a network

NIC

Network Interface Card

NTP

Network Time Protocol

O

OFDM

Orthogonal Frequency-Division Multiplexing is the modulation technique for 802.11g

OSI

Open Systems Interconnection is the reference model for how data should travel between two devices on a network

OSPF

Open Shortest Path First is a routing protocol that is used more than RIP in larger scale networks because only changes to the routing table are sent to all the other routers in the network as opposed to sending the entire routing table at a regular interval, which is how RIP functions

P

Password

A sequence of characters that is used to authenticate requests to resources on a network

Personal Area Network

The interconnection of networking devices within a range of 10 meters

Physical layer

The first layer of the OSI model. Provides the hardware means of transmitting electrical signals on a data carrier

Ping

A utility program that verifies that a given Internet address exists and can receive messages. The utility sends a control packet to the given address and waits for a response.

PoE

Power over Ethernet is the means of transmitting electricity over the unused pairs in a category 5 Ethernet cable

POP3

Post Office Protocol 3 is used for receiving email

Port

A logical channel endpoint in a network. A computer might have only one physical channel (its Ethernet channel) but can have multiple ports (logical channels) each identified by a number.

PPP

Point-to-Point Protocol is used for two computers to communicate with each over a serial interface, like a phone line

PPPoE

Point-to-Point Protocol over Ethernet is used to connect multiple computers to a remote server over Ethernet

PPTP

Point-to-Point Tunneling Protocol is used for creating VPN tunnels over the Internet between two networks

Preamble

Used to synchronize communication timing between devices on a network

Q

QoS

Quality of Service

R

RADIUS

Remote Authentication Dial-In User Service allows for remote users to dial into a central server and be authenticated in order to access resources on a network

Reboot

To restart a computer and reload it's operating software or firmware from nonvolatile storage.

Rendezvous

Apple's version of UPnP, which allows for devices on a network to discover each other and be connected without the need to configure any settings

Repeater

Retransmits the signal of an Access Point in order to extend it's coverage

RIP

Routing Information Protocol is used to synchronize the routing table of all the routers on a network

RJ-11

The most commonly used connection method for telephones

RJ-45

The most commonly used connection method for Ethernet

RS-232C

The interface for serial communication between computers and other related devices

RSA

Algorithm used for encryption and authentication

S

Server

A computer on a network that provides services and resources to other computers on the network

Session key

An encryption and decryption key that is generated for every communication session between two computers

Session layer

The fifth layer of the OSI model which coordinates the connection and communication between applications on both ends

Simple Mail Transfer Protocol

Used for sending and receiving email

Simple Network Management Protocol

Governs the management and monitoring of network devices

SIP

Session Initiation Protocol. A standard protocol for initiating a user session that involves multimedia content, such as voice or chat.

SMTP

Simple Mail Transfer Protocol

SNMP

Simple Network Management Protocol

SOHO

Small Office/Home Office

SPI

Stateful Packet Inspection

SSH

Secure Shell is a command line interface that allows for secure connections to remote computers

SSID

Service Set Identifier is a name for a wireless network

Stateful inspection

A feature of a firewall that monitors outgoing and incoming traffic to make sure that only valid responses to outgoing requests are allowed to pass through the firewall

Subnet mask

Determines what portion of an IP address designates the Network and which part designates the Host

Syslog

System Logger -- a distributed logging interface for collecting in one place the logs from different sources. Originally written for UNIX, it is now available for other operating systems, including Windows.

T

TCP

Transmission Control Protocol

TCP Raw

A TCP/IP protocol for transmitting streams of printer data.

TCP/IP

Transmission Control Protocol/Internet Protocol

TFTP

Trivial File Transfer Protocol is a utility used for transferring files that is simpler to use than FTP but with less features

Throughput

The amount of data that can be transferred in a given time period

Traceroute

A utility displays the routes between your computer and specific destination

U

UDP

User Datagram Protocol

Unicast

Communication between a single sender and receiver

Universal Plug and Play

A standard that allows network devices to discover each other and configure themselves to be a part of the network

Upgrade

To install a more recent version of a software or firmware product

Upload

To send a request from one computer to another and have a file transmitted from the requesting computer to the other

UPnP

Universal Plug and Play

URL

Uniform Resource Locator is a unique address for files accessible on the Internet

USB

Universal Serial Bus

UTP

Unshielded Twisted Pair

V**Virtual Private Network**

VPN: A secure tunnel over the Internet to connect remote offices or users to their company's network

VLAN

Virtual LAN

Voice over IP

Sending voice information over the Internet as opposed to the PSTN

VoIP

Voice over IP

W**Wake on LAN**

Allows you to power up a computer through its Network Interface Card

WAN

Wide Area Network

WCN

Windows Connect Now. A Microsoft method for configuring and bootstrapping wireless networking hardware (access points) and wireless clients, including PCs and other devices.

WDS

Wireless Distribution System. A system that enables the interconnection of access points wirelessly.

Web browser

A utility that allows you to view content and interact with all of the information on the World Wide Web

WEP

Wired Equivalent Privacy is security for wireless networks that is supposed to be comparable to that of a wired network

Wide Area Network

The larger network that your LAN is connected to, which may be the Internet itself, or a regional or corporate network

Wi-Fi

Wireless Fidelity

Wi-Fi Protected Access

An updated version of security for wireless networks that provides authentication as well as encryption

Wireless ISP

A company that provides a broadband Internet connection over a wireless connection

Wireless LAN

Connecting to a Local Area Network over one of the 802.11 wireless standards

WISP

Wireless Internet Service Provider

WLAN

Wireless Local Area Network

WPA

Wi-Fi Protected Access. A Wi-Fi security enhancement that provides improved data encryption, relative to WEP.

X

xDSL

A generic term for the family of digital subscriber line (DSL) technologies, such as ADSL, HDSL, RADSL, and SDSL.

Y

Yagi antenna

A directional antenna used to concentrate wireless signals on a specific location